

**2SC4441**

## Ultrahigh-Definition Monocuro Display Horizontal Deflection Output Applications

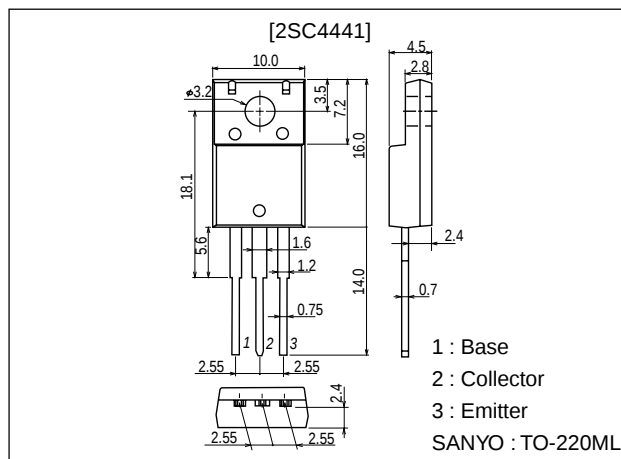
### Features

- High reliability (Adoption of HVP process).
- Fast switching speed.
- High breakdown voltage.
- Wide ASO.
- Adoption of MBIT process.
- Micaless package facilitating mounting.

### Package Dimensions

unit:mm

2041A



### Specifications

#### Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

| Parameter                    | Symbol    | Conditions                                        | Ratings     | Unit             |
|------------------------------|-----------|---------------------------------------------------|-------------|------------------|
| Collector-to-Base Voltage    | $V_{CB0}$ |                                                   | 600         | V                |
| Collector-to-Emitter Voltage | $V_{CE0}$ |                                                   | 400         | V                |
| Emitter-to-Base Voltage      | $V_{EB0}$ |                                                   | 7           | V                |
| Collector Current            | $I_C$     |                                                   | 10          | A                |
| Collector Current (Pulse)    | $I_{CP}$  | $PW \leq 300\mu\text{s}$ , Duty Cycle $\leq 10\%$ | 20          | A                |
| Collector Dissipation        | $P_C$     |                                                   | 2.0         | W                |
|                              |           | $T_c = 25^\circ\text{C}$                          | 35          | W                |
| Junction Temperature         | $T_j$     |                                                   | 150         | $^\circ\text{C}$ |
| Storage Temperature          | $T_{stg}$ |                                                   | -55 to +150 | $^\circ\text{C}$ |

#### Electrical Characteristics at $T_a = 25^\circ\text{C}$

| Parameter                               | Symbol         | Conditions                              | Ratings |     |     | Unit          |
|-----------------------------------------|----------------|-----------------------------------------|---------|-----|-----|---------------|
|                                         |                |                                         | min     | typ | max |               |
| Collector Cutoff Current                | $I_{CB0}$      | $V_{CB} = 400\text{V}$ , $I_E = 0$      |         |     | 10  | $\mu\text{A}$ |
|                                         | $I_{CES}$      | $V_{CE} = 600\text{V}$                  |         |     | 0.5 | mA            |
| Collector-to-Emitter Sustain Voltage    | $V_{CE0(sus)}$ | $I_C = 100\text{mA}$ , $I_B = 0$        | 400     |     |     | V             |
| Emitter Cutoff Current                  | $I_{EBO}$      | $V_{EB} = 5\text{V}$ , $I_C = 0$        |         |     | 1   | mA            |
| Collector-to-Emitter Saturation Voltage | $V_{CE(sat)}$  | $I_C = 6\text{A}$ , $I_B = 1.2\text{A}$ |         |     | 0.8 | V             |
| Base-to-Emitter Saturation Voltage      | $V_{BE(sat)}$  | $I_C = 6\text{A}$ , $I_B = 1.2\text{A}$ |         |     | 1.5 | V             |

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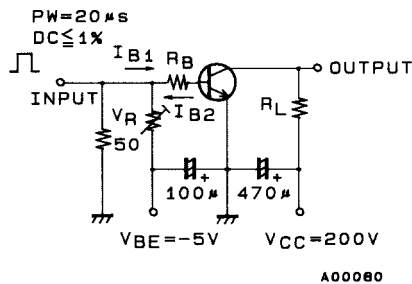
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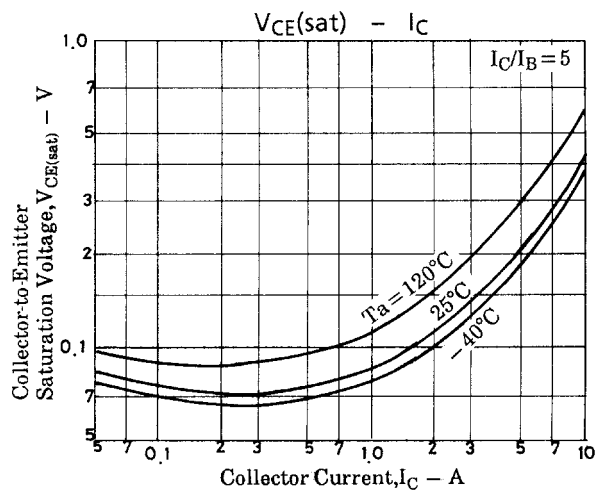
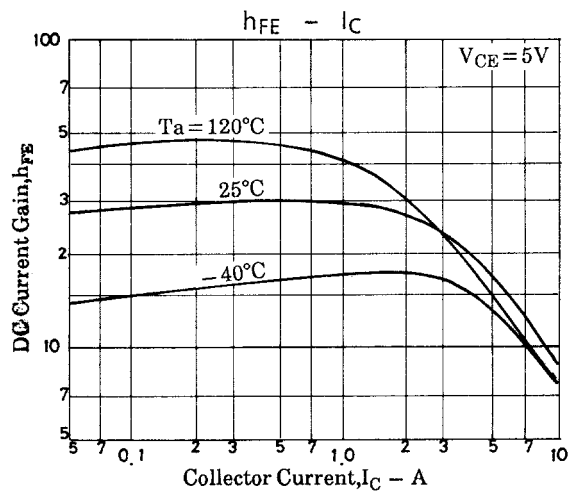
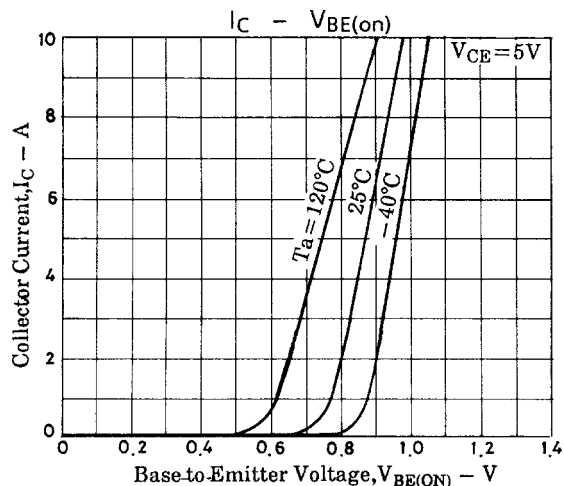
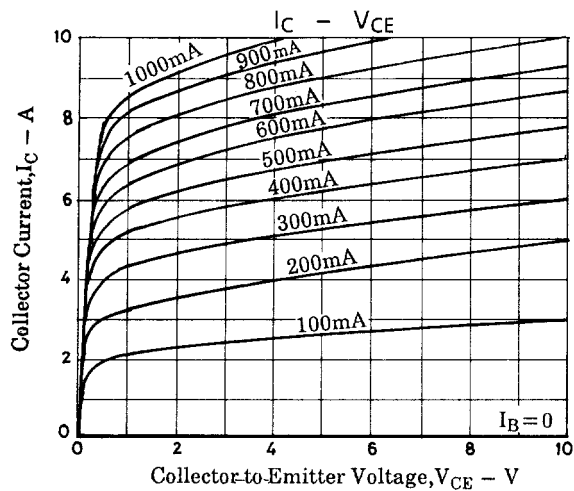
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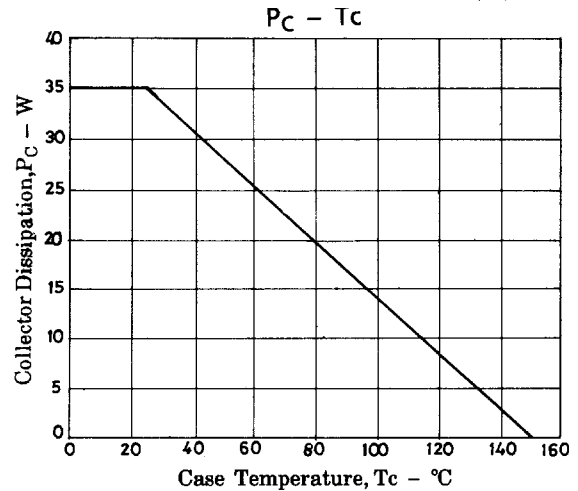
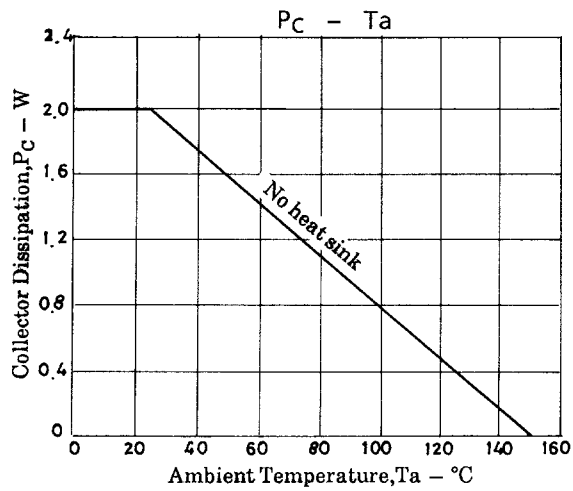
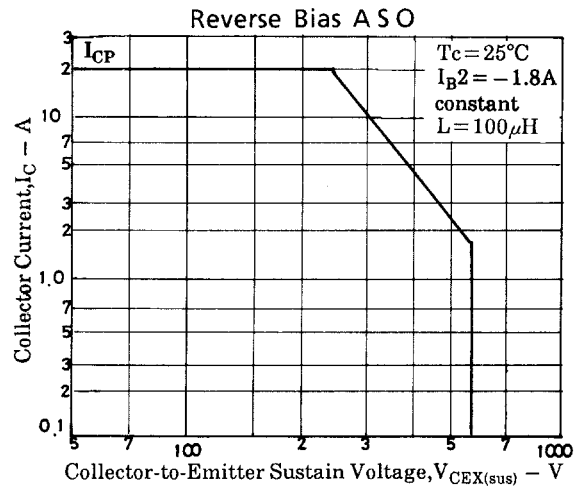
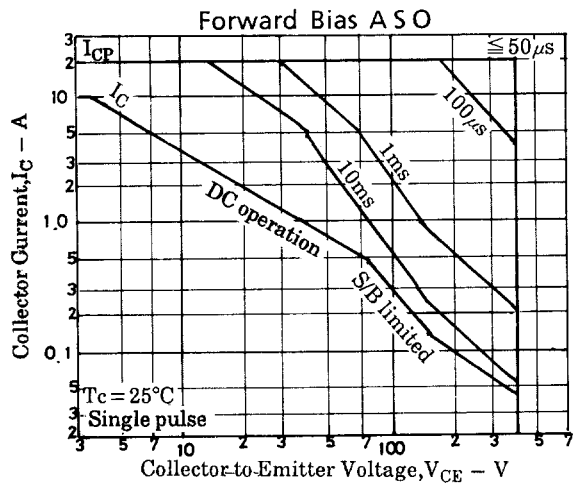
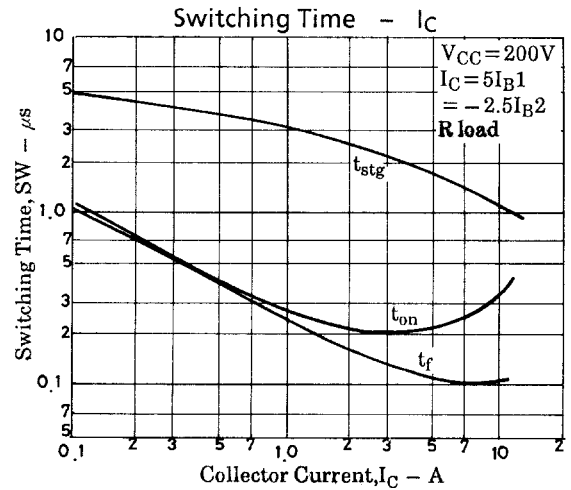
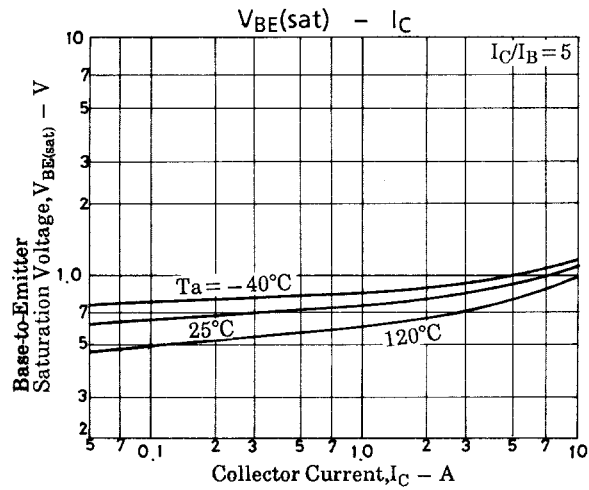
| Parameter              | Symbol    | Conditions                                                       | Ratings |     |     | Unit    |
|------------------------|-----------|------------------------------------------------------------------|---------|-----|-----|---------|
|                        |           |                                                                  | min     | typ | max |         |
| DC Current Gain        | $h_{FE1}$ | $V_{CE}=5V, I_C=1.2A$                                            | 15      |     |     |         |
|                        | $h_{FE2}$ | $V_{CE}=5V, I_C=6A$                                              | 10      |     | 20  |         |
| Gain-Bandwidth Product | $f_T$     | $V_{CE}=10V, I_C=1.2A$                                           |         | 20  |     | MHz     |
| Storage Time           | $t_{stg}$ | $I_C=7A, I_{B1}=1.4A, I_{B2}=-2.8A, R_L=28.6\Omega, V_{CC}=200V$ |         |     | 3.0 | $\mu s$ |
| Fall Time              | $t_f$     | $I_C=7A, I_{B1}=1.4A, I_{B2}=-2.8A, R_L=28.6\Omega, V_{CC}=200V$ |         |     | 0.2 | $\mu s$ |

Switching Time Test Circuit



Unit (resistance: $\Omega$ , capacitance:F)





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